IDEA-0666-68
Copy 6 of 6

9 September 1968

MEMORANDUM FOR: Budget and Programs Division/COMPT/OSA

SUBJECT: Requirement for "H" Camera

REFERENCE: OSA-2730-68

1. The requirement for maintaining the "H" camera in the OSA inventory is not justified on the basis of its annual cost or the number of operational missions it has been used on, but rather from the fact that we do not have any camera that will do a peripheral or stand off mission as well. The following tabulation illustrates the point:

	NAUTICAL MILES FROM FLIGHT PATH							
	0	10	20	30	40	50	60	70
"H" Camera	8"	11"	18"	24"	32"	41"	49"	58"
"B" Camera	18"	27"	49"	63"	87"	111"	132"	157"
Delta III	12"	13"	NOTE: 8.5 miles maximum					
Optical Bar	12"	14"	24"	36"	NOTE: 30 miles maximum			

It will be noted that in the critical area from 20 to 30 miles off the flight track, the Delta III camera has no capability since its cross track scan ends at 8.5 nautical miles, while the optical bar camera has one third less resolution than the "H" camera and will not be OR until February 1969.

2. It appears that for the present and the forseeable future the need for the "H" camera will be greater rather than less as defensive armaments and the world political situation dictate fewer covert overflights.

3. SAC disenchantment with the "H" camera stems from the fact that it requires more tender loving care than they were willing to give it.

a. It has a gyro stabilized platform which requires careful pilotage to avoid exceeding the roll pitch and yaw stops.

b. The large volume of glass in the lens requires careful environmental control to insure that it stays in focus. The camera structure and lens must be kept at the same temperature, $\pm$ 5°F for two hours before attempting photography.

c. The narrow field angle of the lens (less than 4°) requires careful boresighting and aiming to insure that a particular target is covered.

d. Double imaging occurs at the junction point of the bottom window glass and the two side panes. It is caused by the difference in angle of incidence between the side and bottom sections of glass. The maximum separation of the two images is 5 arc seconds or about 20" ground resolution.

e. Despite these "special handling" requirements for the "H" camera, it does provide a capability for high resolution stand off photography that nothing else in the inventory will do.

4. It is therefore recommended that the "H" camera released by SAC be moved to Detachment G and maintained in OR condition until 1 May 1969 at which time an assessment will be made in light of its usefulness with the U-2R vehicle and the performance history of the optical bar camera.

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SSD/R&D/OSA

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SSD/R&D/OSA/[redacted]bjg
Distribution:
Cy 1 - BPD/COMPT/OSA
2 - D/O/OSA
3 - D/M/OSA
4 - D/R&D/OSA
5 - IDEA/O/OSA
6 - SSD/R&D/OSA
7 - SSD/R&D Chrono
8 - RB/OSA